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## (54) HYDROPHOBIC GLYCYRRHIZAE RADIX EXTRACT COMPOSITION

## (57)Abstract:

PROBLEM TO BE SOLVED: To obtain the subject stable radix extract composition having good handleability and useful for providing a preparation having high stability by including a polyhydric alcohol fatty acid ester, a hydrophobic Glycyrrhizae Radix extract and oil and fat.

SOLUTION: This composition comprises (A) a polyhydric alcohol fatty acid ester (preferably a diglycerol monofatty acid ester such as diglyceryl monoisostearate, especially having  $\leq 7.5$  HLB), (B) a hydrophobic Glycyrrhizae Radix extract and (C) oil and fat (preferably exhibiting fluidity at ordinary temperature, e.g. a dialkyl carbonate). The component B is obtained by subjecting an extracted solution obtained by extracting root or rhizome of Glycyrrhiza glabra with an organic solvent such as ethanol or an extract obtained by removing the solvent to purification treatment such as decoloring or deodorization. The composition contains glabridin, glabrene, or the like, as main ingredient. The composition comprises 10-50 wt.% component A, 1-20 wt.% component B and the balance of the component C.

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CLAIMS

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## [Claim(s)]

[Claim 1]A hydrophobic glycyrrhiza extract containing composition containing polyhydric alcohol fatty acid ester, a hydrophobic glycyrrhiza extract, and fats and oils.  
[Claim 2]HLB of polyhydric alcohol fatty acid ester is 7.5. The constituent according to claim 1 which is the following.  
[Claim 3]The constituent according to claim 1 or 2 whose polyhydric alcohol fatty acid ester is with a degree of polymerization [ of two or more ] polyglyceryl fatty acid ester.  
[Claim 4]The constituent according to claim 3 whose polyhydric alcohol fatty acid ester is diglycerol mono- fatty acid ester.  
[Claim 5]A constituent of claim 1-4 which contains polyhydric alcohol fatty acid ester ten to 50% of the weight given in any 1 paragraph.  
[Claim 6]A constituent of claim 1-5 which contains a hydrophobic glycyrrhiza extract one to 20% of the weight given in any 1 paragraph.  
[Claim 7]A constituent of claim 1-6 whose fats and oils are dialkyl carbonate given in any 1 paragraph.  
[Claim 8]External preparations containing a constituent of claim 1-7 given in any 1 paragraph.  
[Claim 9]Cosmetics containing a constituent of claim 1-7 given in any 1 paragraph.

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## DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the external preparations and cosmetics containing the constituent containing the hydrophobic glycyrrhiza extract which does not dissolve in water and an oil, and this.

[0002]

[Description of the Prior Art]The root or rhizome of liquorice (Glycyrrhiza group vegetation, such as Glycyrrhiza glabra, G.uralensis, and G.inflata). The extract from which the extract extracted with organic solvents, such as ethanol, chloroform, a methylene chloride, and ethyl acetate, or its solvent was removed, and its extract are decolorized, Flavonoid, such as glove lysine and glabrene, is used as the main ingredients, it is checked that there are whitening actions, tyrosinase activity inhibitory action, an antioxidant action, an antibacterial action, and a SOD Mr. operation, and what is called "hydrophobic glycyrrhiza extracts" that carried out purification treatment, such as deodorization, is used for various cosmetics, external preparations, etc.

[0003]The hydrophobic glycyrrhiza extract is used hardly dissolving in water and a common oil, but making it dissolve in a suitable solvent.

Ethanol, propylene glycol, a 1,3-butylene glycol, etc. are one of those have been conventionally used as a solvent.

[0004]However, when these were used for cosmetic formulation, such as an emulsion, since these solvents shifted to the aqueous phase, there was a problem on which a hydrophobic glycyrrhiza extract deposits.

[0005]Although an unstable thing, such as coloring the depositing hydrophobic glycyrrhiza extract, is known and tocopherol, gallic acid, flavonoid, ascorbic acid, sorbic acid, and citrate were used as a stabilizing agent for it. The stabilization effect of the glove lysine which is the main ingredients of a hydrophobic glycyrrhiza extract was not enough. Although the trial using pyrosulfite or sulfite salt as a stabilizing agent also occurs, since these are not preferred as an additive of cosmetics, they are not practical.

[0006]In order to solve the soluble problem of a hydrophobic glycyrrhiza extract, the trial using medium-chain-fatty-acid triglyceride is seen. However, since the sensitization of medium chain fatty acid by slight hydrolysis [ be / and / as for medium-chain-fatty-acid ester / in the feel nature which cosmetics are expected / many problems ] was large, it was not preferred as cosmetics.

[0007]

[Problem(s) to be Solved by the Invention]Thus, although the hydrophobic glycyrrhiza extract had the efficacy outstanding as external preparations or cosmetics, use was difficult in order not to dissolve in water or an oil.

[0008]An object of this invention is for it to be stable, to deal with it and to obtain a sexual good hydrophobic glycyrrhiza extract containing composition and to obtain the extremely stable pharmaceutical preparation using this.

[0009]

[Means for Solving the Problem]As a result of examining many things that a hydrophobic glycyrrhiza extract should be stably dissolved out of an ingredient with high safety, by blending polyhydric alcohol fatty acid ester with fats and oils, this invention persons find out that a hydrophobic glycyrrhiza

extract containing composition excellent in stability is obtained, and came to complete this invention. When cosmetic formulation was prepared using this constituent, it found out that cosmetics with the good stability of a hydrophobic glycyrrhiza extract could be obtained easily.

[0010]That is, this invention provides external preparations and cosmetics containing a hydrophobic glycyrrhiza extract containing composition containing polyhydric alcohol fatty acid ester, a hydrophobic glycyrrhiza extract, and fats and oils, and this constituent.

[0011]In this invention, with a hydrophobic glycyrrhiza extract, a root or a rhizome of liquorice

(Glycyrrhiza group vegetation, such as Glycyrrhiza glabra, G.uralensis, and G.inflata), Decolorization, deodorization, etc. carry out purification treatment of an extract from which an extract extracted with organic solvents, such as ethanol, chloroform, a methylene chloride, and ethyl acetate, or its solvent was removed, and its extract, and glove lysine, glabrene, etc. are contained in the main ingredients. as the commercial item of a hydrophobic glycyrrhiza extract — oil-soluble glycyrrhiza extract P-T (made by Maruzen Pharmaceuticals Co., Ltd.), oil-soluble glycyrrhiza extract P-T (made by Maruzen Pharmaceuticals Co., Ltd.), and oil-soluble glycyrrhiza extract P-T (40) etc. (made by Maruzen Pharmaceuticals Co., Ltd.) etc. — it can be used.

[0012]In polyhydric alcohol fatty acid ester used for this invention, with "polyhydric alcohol," Alcohol which has two or more hydroxyl groups in the same intramolecular is said, by the number of hydroxyl groups, there are dihydric alcohol, trihydric alcohol, etc. and sugar-alcohol generated by reduction of monosaccharide, such as pentavalent alcohol and hexahydric alcohol, is also contained. As polyhydric alcohol, for example Propylene glycol, a 1,3-butylene glycol, Ethylene glycol, glycerin, glucose, malt sugar, maltitol, Polyglycerin, such as sucrose, fructose, xylitol, inositol, pentaerythritol, trehalose, etc. diglycerol, triglycerol, tetraglycerin, etc. are mentioned, and with a degree of polymerization [ of two or more ] polyglycerin is preferred. As for fatty acid, fatty acid of the carbon numbers 12-22 is mentioned, and, specifically, isostearic acid, stearic acid, lauric acid, myristic acid, oleic acid, etc. are mentioned. As for polyhydric alcohol fatty acid ester, HLB is 7.5. A thing of 4.5-7.5 is especially preferred hereafter. Especially in this invention, diglycerol mono- fatty acid ester, such as monoisostearate diglycerol, is preferred, and 7.5 or less thing has still more preferred HLB also in it.

[0013]Dialkyl carbonate in which fats and oils used for this invention have solubility and mobility in which what shows mobility at ordinary temperature is desirable especially moderate is used preferably. A carbon number of an alkyl group by which dialkyl carbonate is marketed can use a thing of 12-15. As other fats and oils, octanoic acid Sept lles, octanoic acid stearyl, Lauric acid hexyl, myristic acid isopropyl, myristic acid butyl, Myristic acid isocetyl, myristic acid octyldodecyl, pulmitic acid isopropyl, pulmitic acid octyl, adipic acid JISOPUROPURU, diethyl sebacate, Tori octanoic acid glyceryl, Tori octanoic acid trimethylolpropane, other natural animal and vegetable oils, etc. are mentioned.

[0014]It is as follows when a manufacturing method of a constituent of this invention is explained concretely.

- (1) Make fats and oils, such as dialkyl carbonate, distribute a hydrophobic glycyrrhiza extract first.
- (2) Add and agitate polyhydric alcohol fatty acid ester to these dispersion liquid, and obtain a transparent solution.

Above (1) (2) It sets and the mixture ratio of each ingredient and terms and conditions of mixing requirements (temperature, an agitating speed, etc.) are not limited.

[0015]When an example of a presentation of a constituent of this invention is given, it is fats and oils of 10 to 50 % of the weight of polyhydric alcohol fatty acid ester, 1 to 20 % of the weight of hydrophobic glycyrrhiza extracts, and the remainder. 10 to 50 % of the weight of polyhydric alcohol fatty acid ester, 1 to 20 % of the weight of hydrophobic glycyrrhiza extracts, and a transparent solution form constituent containing dialkyl carbonate of the remainder are mentioned especially.

[0016]A constituent of this invention is useful as external preparations, such as skin remedies, such as ointment for dermatology. Especially a hydrophobic glycyrrhiza extract containing composition of this invention is useful as cosmetics. Although there is no limitation in cosmetics which use a hydrophobic glycyrrhiza extract containing composition of this invention, lip sticks, such as a cream kind of emollient cream etc. and milky lotions, are mentioned, for example, and what blended drugs of vitamins and others with these and gave drug effect is mentioned.

[0017]

[Effect of the Invention]Although it contains a hydrophobic glycyrrhiza extract in high concentration,

the constituent of this invention is a transparent solution, is excellent in stability and can maintain mothball stability. Since the ingredient safe for a human body is used, it is desirable for external preparations or cosmetics. Also when it adds to an emulsion, the stability of a hydrophobic glycyrrhiza extract is held.

[0018]

[Embodiment of the Invention]Hereafter, although the example using the constituent of this invention is shown, this invention is not limited to these.

[0019]The dialkyl carbonate of the quantity shown in Table 1 warmed at about 70 °C is made to distribute the hydrophobic glycyrrhiza extract of the quantity shown in Example 1 (preparation of hydrophobic glycyrrhiza extract containing composition) table 1. For about 5 minutes, polyhydric alcohol fatty acid ester of the quantity shown in Table 1 was added, churning was further continued after churning, and various hydrophobic glycyrrhiza extract containing compositions (it may only be hereafter called a constituent) were obtained. The hydrophobic glycyrrhiza extract used here is oil-soluble glycyrrhiza extract P-TH (made by Maruzen Pharmaceuticals Co., Ltd.).

[0020]The following standard estimated the solution state after neglecting the constituent prepared by the (stability of constituent) above for three months at 5 °C (temperature it is supposed that a deposit of a hydrophobic glycyrrhiza extract generally takes place). The result is shown in Table 1. solution state 5: — a deposit of a crystal is not seen — transparent state 4: — the state in which

1:crystal which is not accepted deposited and distributed the deposit of a crystal although 2:muddiness to which a deposit of a crystal is not accepted although muddiness is accepted a little [ 3:] to which a deposit of a crystal is not accepted although cloudy weather is seen very slightly was accepted [0021]

[Table 1]

配合成分(重量%)	組 成 物 No.															
	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	3-1	3-2	3-3	3-4	4-1	4-2	4-3
疎水性界面活性剤	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
モノステアリン酸グリセリル (HLB=5.5)	35	30	30	25	20	—	—	—	—	—	—	—	—	—	—	—
モノステアリン酸グリセリル (HLB=4.0)	—	—	—	—	35	30	25	20	—	—	—	—	—	—	—	—
モノステアリン酸グリセリル (HLB=2.5)	—	—	—	—	—	—	—	—	35	30	25	20	—	—	—	—
モノステアリン酸グリセリル (ZEO)(HLB=4.5)	—	—	—	—	—	—	—	—	—	—	—	—	35	30	25	20
炭酸ナトリウム(C <sub>14</sub> H <sub>10</sub> O <sub>2</sub> )	60	65	62	70	75	60	55	70	75	60	65	70	75	60	65	70
溶解状態(5℃, 3ヶ月後)	5	5	5	5	5	4	3	3	3	3	3	2	2	1	1	1

[0022]In order to check quantitatively the stability of the hydrophobic glycyrrhiza extract in the inside of the oil phase in contact with the aqueous phase of the constituent prepared in Example 2

<stability in inside of oil phase in contact with aqueous phase> example 1, they are a constituent/water. [System (A)] And a liquid paraffin dilution constituent / water Aging of the fixed-quantity value of the hydrophobic glycyrrhiza extract in two systems of [a system (B)] was measured. System (A) (B) A presentation is shown in Table 2. The used constituent is (A). (B) is the constituent 1-2 of Table 1 of Example 1. Test operation was fully shaken for 3 minutes after preparing each system, took out the upper oil phase after neglect at 5 °C after centrifugal separation on the 7th, measured the absorbance of 282 nm based on absorption of glove lysine, and measured the content of the glycyrrhiza extract in an oil phase from the analytical curve currently prepared beforehand. although the result is shown in Table 2 — system (A) (B) \*\*\* — the survival rate of a glycyrrhiza extract is not less than 97%, and it was shown that the glycyrrhiza extract exists in an oil phase stably.

[0023]

[Table 2]

組成(重量%)	系(A)		系(B)	
	組成物1-2	流動パラフィン	組成物1-2	流動パラフィン
油相	30	0	30	0
水相	70	100	70	100
油相中の甘草エキスの比率(重量%)	試験前	試験後	試験前	試験後
	5.00	4.88	5.00	4.88
甘草エキス残存率(%)	97.6	98.1	97.6	98.1

[0024]Example 3 (whitening cream)

The whitening cream which consists of a following oil phase and aqueous phase was prepared. \*\*: — oil phase Constituent (constituent 1-2 of Example 1). 2.0 % of the weight Squalane 8.0 % of the weight . Tori 2-ethylhexanoic acid — glyceryl 8.0 % of the weight . behenyl alcohol 5.0 % of the weight Selachyl alcohol . 0.2 % of the weight Polyoxyethylene (20) Sept illes ether . 1.0 % of the weight Monostearin acid polyethylene glycol (40EO) 1.0 % of the weight Propylparaben 0.1 % of the weight \*\*: — aqueous phase Xanthan gum (2-% of the weight solution) 15.0 % of the weight Concentrated glycerin 5.0 % of the weight Methylparaben . 0.2 % of the weight Purified water 54.2 % of the weight.

[0025]Example 4 (lip stick)

The lip stick which consists of the following presentation was prepared.

constituent (constituent 1-2 of Example 1) 2.0 % of the weight . Castor oil 59.0 % of the weight Octyldodecanol 20.0 % of the weight Ceresin 710 5.0 % of the weight Liquid paraffin (135 \*\*F) 4.0 % of the weight Carnauba wax 2.0 % of the weight Beeswax 4.0 % of the weight Candelilla wax 4.0 % of the weight.

[0026]Example 5 (lip stick)

The lip stick which consists of the following presentation was prepared.

constituent (constituent 1-2 of Example 1) 2.0 % of the weight . Malate disostearyl 59.0 % of the weight Octyldodecanol 20.0 % of the weight Ceresin 710 5.0 % of the weight Paraffin (135 \*\*F) 4.0 % of the weight Carnauba wax 2.0 % of the weight Beeswax 4.0 % of the weight Candelilla wax 4.0 % of the weight

[Translation done.]